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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/995,165      | 11/26/2001  | Jeffrey R. Thomas    | ITWO:0019           | 9370             |

7590 12/30/2003  
Ralph A. Graham  
Fletcher, Yoder & Van Someren  
P.O. Box 692289  
Houston, TX 77269-2289

EXAMINER

LEUNG, PHILIP H

ART UNIT PAPER NUMBER

3742

DATE MAILED: 12/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/995,165

Applicant(s)

THOMAS ET AL.

Examiner

Philip H Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 and 37-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 and 37-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 and 3 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Applicant's election without traverse of Group I, claims 1-27 and 37-45, in Paper No. 5 is acknowledged. The nonelected claims 28-36 have been cancelled.

2. The drawings filed 11/26/2001 are acceptable.

3. Claim 10 and claim 43 are objected to as they are identical. One of them must be changed or cancelled.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 8, 9, 11, 12, 16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen (US 5,033,720).

Chen shows an apparatus including an induction heating coil (33, 34) for heating a specimen 31, controlled by a programmable controlling device 32 with temperature measuring feedback device (39, 40) and a recording device 41 for recording the temperature measurements of the specimen 31. The programmable controlling device 32 can control the heating conditions in the heat treatment of the specimen 31 so as to control the specimen 31 at a desired temperature by controlling the power source (not shown by inherent) of the heating device (see Figures 1 and 2 and col. 2, line 10 – col. 3, line 55).

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 3-7, 10, 13-15, 17, 19-27 and 39-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 5,033,720), in view of Amateau et al (US 5,391,862).

Chen shows an apparatus including an induction heating coil (33, 34) for heating a specimen 31, controlled by a programmable controlling device 32 with temperature measuring feedback device (39, 40) and a recording device 41 for recording the temperature measurements of the specimen 31. The programmable controlling device 32 can control the heating conditions in the heat treatment of the specimen 31 so as to control the specimen 31 at a desired temperature by controlling the power source of the heating device (see Figures 1 and 2 and col. 2, line 10 – col. 3, line 55). Chen therefore shows every element and feature of the claimed invention except for the explicit showing of the programmable control instructions for the heating control device although it is inherently capable of doing the same. Anyway, Amateau shows an induction

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heating device for stress relieving metal objects with heating and quenching, the device having a temperature feedback control system (44, 50) with a programmable control device having an user interface (34, 36) to control the power 38, 40 to the induction heating coil 42. The programmable device allows the user to control the process with a sequence of operations or “program” using a series of commands which are stored for execution according to the sensed temperature of the objects and other parameters (see Figures 1 and 2 and col. 6, line 20 – col. 7, line 28). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Chen to use any well known programmable device with user interface to program the heating process according to the temperature feedback system for a better and more precise heating profile, in view of the teaching of Amateau. The exact temperature control profile would be a matter of engineering design depending on the workpiece characteristics and heating requirements and conditions. Although Chen does not specify that the recorder, the system controller and power source are portable, to use a portable device would be obvious as the use of portable computers are well known for conveniences. The use of any well known controllers including PIDs and the use of a multiple sensors would be a matter of engineering design variations of the ones shown in Chen and Amateau.

8. The prior art made of record below is considered pertinent to applicant's disclosure:

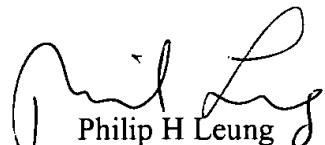
Hetzel et al (US 3,620,294) is cited to show a programmable temperature feedback controller for an induction heating device and *Stacey (US 3,637,985)* is further cited to show a portable temperature sensing system with a recorder for a heating apparatus

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H Leung whose telephone number is (703) 308-1710. The examiner can normally be reached on flexible.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on (703) 308-2634. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.



Philip H Leung  
Primary Examiner  
Art Unit 3742

P.Leung/pl  
12-22-2003